THE HUMANE SOCIETY OF THE UNITED STATES

Rules Processing Team
381 Elden Street, MS-4024
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28 February 2006

RE: RIN 1010-AD30, Alternate Energy Related Uses on the Outer Continental Shelf

On behalf of the more than nine million members and constituents of The Humane Society of the United States (HSUS), I am submitting comments on your proposal to develop a regulatory program to implement portions of the Energy Policy Act of 2005.

We commend the Minerals Management Service (MMS) for being so prompt in moving to develop regulations that would affect siting and other ancillary of the development of alternative energy in the Outer Continental Shelf (OCS).

General Comments

There are a number of specific issues and questions raised in the Advance Notice of Proposed Rulemaking (ANPR) on which we wish to comment, but would like to state most emphatically that the growing interest in siting wind, wave and current powered energy generating facilities has the potential to result in significant adverse consequences to fragile coastal habitats and their inhabitants. In order to avoid situations that have plagued terrestrial energy generation facilities and terrestrial development, we believe that it is crucial that the MMS consider a "zoning" approach to development.

In many cases, energy developers or the Department of Energy itself have developed maps that show the most promising areas for development with regard to various sources of energy generation. Rather than putting in place regulations that foster an *ad hoc* approach to development, we believe that it is incumbent on MMS to begin work as soon as possible with federal management agencies such as the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS), as well as natural resource managers in coastal states and various research institutions to collate information such as published data, GIS data bases, state wildlife inventories and other data sources that can identify locations of the most sensitive species and habitats (e.g., essential fish habitat, critical habitat for endangered species, major wintering areas for waterfowl, well-known migratory corridors for marine wildlife, etc.). This collaboration should result in the development of maps that could be overlaid on alternative energy resource maps, identifying sensitive areas and allowing MMS and developers to know which areas were likely to be least

appropriate for development with regard to possible adverse effects on wildlife and habitat from their energy generating projects.

In the absence of this, or a similar, effort, we are concerned that developers may waste time and resources proposing sites that may be inappropriate rather than concentrating on areas that are the most risk averse. Such an effort will also allow for greater ease in cumulative impacts analysis that would accompany the Environmental Impact Statement (EIS) for any given project.

We offer as a cautionary example the case of the Cape Wind project proposed for Nantucket Sound. It was only after the developer proposed the project and started the permitting process through the Army Corps of Engineers that USFWS, NMFS, Commonwealth of Massachusetts' Natural Heritage program, the roseate tern recovery team and the Audubon Society were asked for their input on the choice of that site. Subsequent to reviewing the proposal, these bodies unanimously criticized the choice of Nantucket Sound as a site for a large industrial wind energy facility and raised significant concerns about the risk posed to ESA listed species, migratory birds and seasonally resident waterfowl. It is possible that Nantucket Sound might not have been selected had a risk assessment mapping exercise, suggested above, had preceded this proposal. Thus the developer could have invested his resources elsewhere, and a great deal of controversy and opposition averted. In this case, the approval for this project is likely to drag on for years through either the regulatory process or the courts.

Before addressing comments on specific program areas, The HSUS would also like to state that we are very concerned about the proposal to allow conversion of existing facilities (e.g., for telecommunication, defense-related platforms, aquaculture, research, oil and gas extraction and exploration, etc.) for use in alternative energy generation or the conversion of energy facilities of one type to another or different use (e.g., aquaculture). The MMS has stated that the Energy Policy Act of 2005 provides MMS with statutory authority for "issu[ing] leases, easement or rights-of-way as also providing MMS authority to regulate or permit the activities that occur on those leases, easements, or rights of way, if those activities are energy-related." We do not agree that the permitting of one structure or site automatically confers the right to use it for another purpose.

Facilities or leases granted for one purpose did not consider the special circumstances of another, future purpose. Any environmental review that they underwent did not consider the special circumstances and risks posed by alternative energy generation or any other ancillary use. For example, the siting concerns for, and risks posed by, aquaculture facilities are quite different that siting concerns and risks surrounding construction of wind turbines or overtopping wave energy generators. As such, any proposal to convert existing structures for alternative energy development, or other purposes, should undergo the same type and depth of analysis and risk assessment, as a new project proposed for an undeveloped area.

Similarly, in the future, if a developer wishes to "piggy back" one sort of alternative energy generation on top of an existing facility (e.g., combining wave energy and wind energy generation or adding aquaculture pens to a site used for wind turbines) this too should undergo the same level of analysis of site suitability as it would were it a stand-alone proposal.

Any structure or lease granted for one purpose should not be considered for another without re-opening the leasing and risk assessment process.

Specific Comments on Program Areas

The MMS has requested specific comments on a number of program areas. We offer them below using the structure outlined in the ANPR.

1. Regulatory regimes in the U.S. or abroad that address similar or related issues

We offer more specific comments on this below but wish to state that there are existing prototypes that can be adopted in whole or part from other areas of the world.

Program Area: Access to OCS Lands and Resources

D. Identify terms and conditions of use

Within this area, MMS has requested comments on a number of aspects of permitting.

Issuance of permits and duration of permit. The HSUS believes that permits should be revocable if terms and conditions of the permit that were established to protect fragile ecosystems or existing living resources are not met by lessees. In any case, permits should not exceed 20 years without requiring renewal of the lease and any necessary revision of the terms and condition of the leave or permit.

Assignment of rights. We do not believe that the MMS should allow the transfer of leases of the OCS from the original lessee to another, secondary, owner. The entity that obtains the lease should be required to develop it, since the right to lease the area should have been predicated on a demonstration by that applicant of its fiscal and technical competence to responsibly develop the site. Rulemaking should prohibit this practice.

Limitation of rights. The MMS should not allow lessees to place sites in suspension to await more favorable energy prices before proceeding to development. Though it is common in the province of oil and gas leasing in the OCS, it should not be permitted in this venue.

Cancellation of rights. The lessees or operator should not be held harmless nor indemnified for the full extent of damages to marine resources caused by their operations or by accidents occurring as a result of their operations.

E. Identify geographical areas of interest.

As noted above, the permitting process would be facilitated by identifying areas in advance that are not well suited for development because they contain sensitive or important habitat or are used by vulnerable species or key life stages. While there is unlikely to be any area in the OCS that will not contain vulnerable habitat or species, it is certainly true that particular areas may be more risk averse than others. For example, the waters off the mouth of Delaware Bay are used by spawning horseshoe crabs, contain essential fish habitat, are a migratory pathway for critically endangered North Atlantic right whales, are heavily used by wintering and/or migratory waterfowl, are a wintering area for harbor porpoise and are part of the Atlantic flyway. Conducting a coast-wide analysis that queried GIS data bases, research institutions, federal and state agencies and the public could identify areas such as this that are important for multiple taxa and thus be less appropriate for large energy projects.

We also suggest undertaking a programmatic environmental review that could examine various risk factors that would inform site selection.

No development should be permitted to occur until a thorough environmental review of particular sites has been completed. Once broad areas that are more risk averse are identified, we believe that development rights to discrete sites should be a competitive process.

J. Minimizing multi-use conflicts.

The MMS has requested information on determination of compensation for areas that foreclose competing uses. It is first necessary to determine what constitutes a competing use that would be foreclosed. For example, while European wind energy facilities have commonly closed their sites to trawling (a.k.a "dragging"), developers of the Cape Wind site stated that this use would not be foreclosed. MMS should identify what uses would be foreclosed from the site of various energy generation facilities; these conflicting uses would be different for wind turbines or various types of kinetic energy generators that have differing requirements for installation of anchoring structures or their need for various portions of the mid-water or water's surface.

The MMS has also requested information regarding the types of assessments that should be required prior to competition for development rights. As stated above, a *programmatic* analysis look of coastal energy development can identify certain areas that are less appropriate for development because they contain sensitive wildlife habitat, historic relics, marine estuarine reserves or sanctuaries, and other impediments to energy development. Providing a coast-wide evaluation should precede any site selection and, once appropriate sites have been identified, individual assessments can be completed to refine information for a particular site.

The NOI requested information on what criteria it should consider when deciding whether to approve a project. The HSUS feels strongly that protecting key wildlife habitats and shielding wildlife from harm resulting from the operation of an energy generating facility should be of paramount importance.

Question 11. Criteria MMS should consider in deciding whether to approve a project

As stated above, the MMS must first ascertain the areas most appropriate for different types of alternative energy development (e.g., areas appropriate for wind turbines may not be appropriate for wave energy projects, etc.) and eliminate from consideration for some or all types of development those areas that contain particularly vulnerable resources or are important areas for wildlife sheltering, feeding or breeding habitat. The MMS should also balance other existing or potential uses of the site that may or may not be consistent with its sole or joint use for energy development. The proposed lessee or developer who bids on an approved site should demonstrate that they have both sufficient fiscal resources and technical expertise to assure responsible development.

Program Area: Environmental Information, Management and Compliance

Under this section, the MMS has requested information to inform its proposed monitoring plan, effects mitigation, data validation and verification, roles and responsibilities, and strategies for adaptive management. We wish to address a number of the questions that have been raised. Where possible, we have used the numbering system laid out in the ANPR.

L. Assessments and studies of risk

There are a number of good models for risk assessment. With regard to prototypes for assessing risk from wind, the Environmental Assessment done for the Burbo Wind farm in the United Kingdom (Seascape 2003), provides one type of template that can be used to assess risk to various taxa, including a mapping of avian risk zones. The assessment of risk to marine mammals that was conducted by contractors to the Danish government for the Horns Rev and Nysted wind sites provides an exemplary prototype for risk assessment for marine mammals and monitoring effects during and post-construction (e.g., Edren et al 2004). In both of these locales, more than one year of pre-construction monitoring was undertaken to address inter-annual variations in habitat uses.

Draft recommendations of the U.S. Fish and Wildlife Service for siting of terrestrial wind farms also call for multi-season and multi-year pre-construction monitoring for potential risk to birds and bats.

With regard to risk assessment from hydro-kinetic energy development (e.g., wave and current driven energy generation), several projects that have been developed in Europe, and Australia, and/or proposed for the U.S., have resulted in preliminary summaries of considerations in site selection and risk analysis (EMEC 2005, EPRI 2005, ONR 2001).

The type of risk assessment for hydro-kinetic energy development will vary depending on the technology. For example, some of the technologies involve blades spinning under water (e.g., horizontal or vertical axis turbines) and they present a very different sort of risk than devices that rely on tidal or wave motion (e.g., overtopping, heave and oscillating water column designs). Different designs pose different risks; some use substantial portions of the surface area, restrict wave action and pose a physical barrier to the use of the surface; and others have spinning blades that may injure fish or sub-surface wildlife. It is clearly important to require different types of risk assessment depending on the technology, and the size and design of the project.

The examples of risk analysis done for other projects, and/or their questions to inform risk analyses, are but a few of the prototypes that exist for various types of ocean-based energy facilities in the international arena. There are others. The MMS should investigate the process of risk analysis used in other parts of the world and adopt those that are the most rigorous, while adapting certain aspects of them the situations that may be unique in the United States. For example, risk assessments done in northern Europe do not take into consideration risk posed to baleen whales, as these animals are not present in those waters although they are present in the coastal waters of the U.S.

General risk assessments for various categories of projects should be developed in advance (e.g., pile driven wind energy turbines, deep water anchored wind energy turbines, axis wave energy turbines, heave-type wave energy turbines, Liquefied Natural Gas ports, conversion of aquaculture facilities to platforms for wind energy, etc.) and site-specific assessments should follow.

M. Examples of best practices for compliance, monitoring and effectiveness

We have previously noted examples of monitoring required by the Danish government. There are a variety of facilities operating in other countries (e.g., wind generating facilities, hydro-kinetic energy generation). These should be investigated and the best practices used in the U.S. as well.

N. Balancing environmental considerations with energy needs

It is clear that facilities generating energy from fossil fuels pump thousands and/or millions of pounds of harmful emissions into the air, and that these emissions harm wildlife habitat and health. It is also clear that our growing populace appears to have an insatiable need for energy. But resolving these concerns should not come at a high cost to wildlife, their habitats or oceanic processes. The MMS should consider that, while we need to provide cleaner energy to assist in mitigating global climate change, this climate change has already altered coastal environments and may already be adversely affecting the distribution of animals and the availability of their food and sheltering requirements. This is why site selection and cumulative impact analysis are critical. It is imperative that projects not be placed in areas known to be of significant importance to wildlife such as

migratory corridors, high-use seasonal or year-round foraging areas for waterfowl, critical habitat, breeding areas and other sensitive wildlife habitat.

12. Types and levels of environmental info

We have previously stated that projects should be required to undertake a multi-year pre-construction monitoring of the site to ascertain environmental baseline data to assist in selection of mitigation measures and against which impacts can be compared post-construction. The MMS should perform programmatic EIS evaluations for commonly used technologies and, in the event that the area is utilized by species listed under state or federal endangered species lists, they should consult with appropriate management agencies. State authority and local concern with activities taking place outside of state boundaries in the OCS should be considered and local authority respected. Projects should comply with the dictates of the Coastal Zone Management Act.

13. Types of site specific studies and when and by whom should they be conducted

As noted above, different project proposals have various potential for adverse environmental consequences. To name a few: structures anchored to the bottom affect sediment transport and deposition; projects that float on the ocean surface block wave action (affecting patterns of coastal erosion) and impose physical barriers; bladed structures pose significant risk of collision and injury to marine wildlife; various lighting schema differentially affect birds, bats and fish; and structures that allow colonization by benthic flora and fauna, or that provide artificial reefs, have both beneficial and deleterious consequences to indigenous marine life. We do not believe that so-called categorical exemptions should be granted to exclude projects from specific review.

The risk assessments should be conducted by qualified and experienced personnel and should be subjected to thorough expert and public review.

14. Goals and objectives of monitoring, mitigation and enforcement

Land based wind facilities have, unfortunately, demonstrated the potential risk from poorly sited wind energy facilities. In the Mountaineer facility in West Virginia, thousands of bats die each year. In others (e.g., portions of the facility in Altamont California) thousands of birds have been killed over the operational life of the facility. It is critical to have adequate pre-construction investigation and monitoring at any proposed facility, regardless of the type, to determine the species and numbers of animals likely to be placed at risk. This pre-construction monitoring will provide a baseline against which impacts can be assessed. This baseline is particularly crucial for later determination of whether animals have been displaced from habitat or migratory routes by the construction of the facility. It is also critical that MMS mandate each facility have a valid plan for monitoring impacts during construction and post-construction operation of the facility. A

mitigation plan is especially critical for facilities whose installation will involve pile driving and other loud noise generation in the ocean.

Terrestrial facilities (e.g., wind turbines) suffer from minimal or no post-construction monitoring, leading to a poor understanding of impacts. Monitoring is likely to be even more difficult in the ocean. Not only will scavenging of carcasses be a problem, as it is on land, but animals who collide with a structure may drown before they regain consciousness. Carcass recovery is more difficult because bodies sink below the ocean surface. Thus monitoring plans will need to be carefully designed with input from experts who are not self-interested industry employees and consultants.

Mitigation plans require careful thought, and can also be designed and recommended for various classes of energy generation facilities. For example, lighting of towers and structures is known to be a problem for migratory birds and appropriate mitigation can be suggested categorically rather than *ad hoc* by each project. Collision risk from bladed structures (above or in-water) needs to be considered and mitigation plans should include the requirement that operation of the facility be suspended if a threshold level of animals is found to be interacting. In this vein, mitigation plans should address issues such as displacement of animals from habitat, adverse impacts to the benthos and/or adverse consequences of alteration of sediment transport, the appropriate use of anti-foulants, oil spill contingency plans, and so forth.

Enforcement of activities in the OCS generally falls to the U.S. Coast Guard. This over-worked agency can ill-afford additional responsibility, and MMS should investigate cooperative agreements with neighboring States. Further, mitigation measures should be designed so that they can be easily monitored (e.g., it is easy to determine whether blades are operating rather than being feathered and that lighting meets certain requirements).

15. Types of impacts of concern and how should they be mitigated

As stated above, we are concerned that there are a host of potential adverse impacts from various types of alternative energy technology. Some of these impacts include: collision risk to marine mammals, birds, fish and turtles posed by structures; collision risk to cetaceans and turtles posed by vessels transiting the area for construction and maintenance; entrainment in equipment; habitat displacement; pollution from lubricant oil spills; impacts from construction-related noise; impacts of low level operational noise; adverse impacts on beaches and the ocean bottom from altered sediment flow; impacts of lighting on migratory birds; impacts of electro-magnetic fields on sensitive species (e.g., turtles and elasmobranchs); effects of placing "artificial reefs" in otherwise sandy habitat; and alteration of ice formation caused by installation of structures. This is by no means an exhaustive list, but these and other impacts need to be evaluated on a programmatic level as well as for individual projects.

The EIS done for development of energy facilities should include, for each facility, a thorough analysis of cumulative and synergistic impacts. It is not sufficient simply to

evaluate the cumulative impact of all *similar* projects being proposed but to follow the guidelines of the Council on Environmental Quality in evaluating contribution of projects to adverse impacts to species throughout their range.

The MMS should consider holding an expert workshop on mitigation measures to allow environmental community and scientists familiar with the behavior of various species and/or hydrogeological processes to suggest meaningful mitigation strategies for particular types of facilities.

16. Program elements leading to successful enforcement

Clearly the thorough and proper construction of the EIS for projects leads to an understanding of risk, provision of adequate monitoring, and delineation of appropriate mitigation. Without adequate review of these factors, enforcement is handicapped. The EIS should be prepared by qualified and experienced personnel and should be subjected to adequate public review. Also, as mentioned above, there should be no categorical exclusions for certain classes of projects and each should undergo site-specific review that will guarantee that the construction, monitoring and mitigation are appropriate.

17 How should monitoring be done and by whom

Because developers have a self-interest in finding no adverse impacts, there should be independent monitoring programs.

Program Area: Operational Activities

O. Pilot projects.

Pilot projects would appear to be less risky than full-scale energy generation but care should be taken to approve pilot projects only in areas where prior analysis has shown that full-scale energy generation with that type of structure is appropriate. For example, it would waste developer resources, and potentially disadvantage wildlife, to permit a small pilot wind facility with one or two turbines in an area that is heavily used by migratory waterfowl, if a large scale facility would not be appropriate. There is no point in "piloting" a project that should not be permitted as a full scale project.

The operating principle with regard to permitting pilot projects should be the precautionary principle.

Q. Protecting environmental resources during construction, production and removal.

Studies done in northern Europe (e.g., Henrikson 2004 and others) have shown that pile driving noise during construction of wind energy generating facilities has a significant impact on habitat use by small cetaceans and seals. Impacts on other marine mammals were not assessed because the area was not one used by large cetaceans or pelagic

species. However, it is likely that other species would also be similarly affected. Clearly mitigation measures should address noise impacts during construction.

For any type of energy generation facility, the design of mitigation measures is predicated on adequate baseline data to elucidate habitat use. Without a thorough understanding of the species and numbers of animals using an area and the type of habitat use, it is not possible to protect wildlife and their habitats from adverse consequences. Thus, proper environmental review is critical.

Removal of structures should not be conducted with explosives. A thorough evaluation should be undertaken at the outset of the project of the impact of the artificial reef provided by the proposed sinking or submersion of a de-commissioned structure. While artificial reefs may seem advantageous, in sandy areas where reefs are uncommon, the provision of a number of new "reefs" may alter the composition of the marine community in the area, attracting fish species not normally present and/or discouraging use of the area by species reliant on unobstructed sandy bottom.

R. Identifying design and installation requirements for installing new projects or modifying existing facilities.

The MMS has considered the possibility of modifying existing aquaculture facilities and/or platforms used for oil and gas exploration as bases for alternative energy generation. We have significant concerns with this sort of proposal for conversion of facilities from one use to another. If conversion is proposed, the environmental review process should proceed as if it were an entirely new facility, as indeed it is. The environmental impacts of military radar platforms, oil and gas rigs and aquaculture facilities may (or may not) have been assessed at the time that those facilities were first constructed, but it is clear that any prior environmental impact analysis did not consider the hazards as those posed by use of the structure for another use such constructing wind turbines and/or sub-surface energy generators. As such, the review should be as thorough and exhaustive as if those existing structures were not being used.

The choice and design of any project, whether is it proposed for undeveloped ocean areas or will be constructed on existing platforms, should be based on risk assessment that is part of a programmatic evaluation of different types of energy generating structures combined with a thorough site-specific assessment. Certain types of structures may be more or less appropriate in certain areas. For example, a sub-surface bladed structure may be less appropriate in areas with high densities of fish, and another type of technology more appropriate.

T. Managing end of life and Facility Removal

Managing this aspect of the construction of an OCS-based energy facility should be part of the original agreement between MMS and the developer. As noted above, agreements should include evaluation of the appropriateness of leaving "reefs" in the area rather than

removing structures from the site. Explosives should not be used. MMS should not countenance abandonment of structures and a bond should be secured to assure proper disposal.

U. Oversight responsibility

All oversight responsibilities (e.g., inspection, monitoring, enforcement) should be the sole responsibility of the federal government. No self-monitoring should be permitted to occur.

19. Consideration of Engineering Challenges

Most facilities are proposed for near-shore locales. Energy companies such as General Electric are investigating the feasibility of placing wind turbines in deeper water. This could obviate some of the view shed concerns as well as avoid some of the risks to coastal migratory birds and marine mammals. Deeper water placement has challenges of its own, including secure anchoring of structures that will withstand the harsher conditions prevalent in areas further from shore. All energy generating structures face challenges from the elements: salt corroding parts and structures; fouling by algaes; damage by wind and waves; scouring by bottom or suspended sediment and ice formation, just to name a few. There is also the possibility of vandalism of near-shore facilities. All of these need to be considered when assuring that facilities will be maintained in a manner that is responsible and poses minimal risk to the environment (e.g., anti-foulants themselves pose risk to organisms)

22. Inspection Programs

Inspections should be conducted by the U.S. government and the frequency and type of inspection will need to be tailored to the specific site and the technology being used.

Program Area: Payments and Revenues

The MMS should not bear costs of evaluating environmental risk and monitoring prior to, during and post-construction. Recovering costs for these activities should be part of any payments and revenues scheme. The MMS should also charge reasonable rents and royalties and require fair market value for use of public trust resources, including occupancy of the sea surface and seabed.

The MMS should also consider the requirement of a surety bond that can be used for relief and environmental restoration in the event of an accident

Program Area: Coordination and Consultation

30. Additional efforts to coordinate at this early stage

As noted above, the concerns and interests of state agencies should be considered and given heavy weight in the choice of sites and technologies that can be used in the OCS outside of state waters. Government management agencies at the state and federal level (e.g., USFWS, NMFS) should be involved in framing risk assessment and data gathering. These various state and federal agencies should be involved throughout the rulemaking, risk assessment and eventual permitting process.

31. Broad approaches versus regional consultation

As we stated in the beginning of our comments, we strongly encourage a coast wide approach to identifying both energy resources and risk-averse areas. This requires a broad approach to coordination and consultation. Following this first cut at identifying areas that should be eliminated from consideration for the siting of certain types of technologies, either because of concerns with sensitive and/or important habitat or concerns for impacts on various species or taxa; MMS should coordinate with regional management agencies and states to identify resources and risks on a smaller scale.

32. Federal/state cooperation

This sort of cooperation is not only useful, it is vital. As noted above, national standards for ocean zoning (coast-wide, regional and local) and site selection and exclusion should be adopted with full participation by all affected stakeholders and coastal states, and, once established, respected by the agency in all future planning decisions.

33 Critical stages in site evaluation, application

Cooperation and consultation needs to take place throughout the broad initial process of evaluating the suitability of areas for development (and the exclusion of some areas) and in the gathering of baseline data; the monitoring that takes place before, during and after construction; and in design and implementation of inspection and enforcement.

Conclusion

Thank you for the opportunity to comment on the ANPR for Alternate energy-related development and use of the OCS. The HSUS believes that the future health and integrity of global ecosystems depends on both conservation of resources and development of cleaner and renewable sources of energy generation. Having said that; however, we must emphasize that the proper siting of facilities is critical to assuring that risks to wildlife and habitat posed by the development do not outweigh potential benefits.

We look forward to continuing to participate in the process of informing the appropriate uses of the OCS. Feel free to contact me if we can be of assistance to you as you proceed through the process of rulemaking, site evaluation and permitting and leasing.

Sincerely,

Sharon B. Young
Marine Issues Field Director

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